

AOR DELINEATION

CTV II

Computational Modeling Results

Predictions of System Behavior

The following maps (**Figure 1.**) and cross-sections (**Figure 2.**) show the computational modeling results and development of the CO₂ plume at different time-steps. The boundaries of the AoR have been defined with a 0.05 CO₂ global mole fraction cutoff plus a buffer zone.

As shown in **Figure 1.** and **Figure 2.**, the CO₂ extent is largely defined by Year 32 after the end of injection. The majority of the CO₂ injectate remains as super-critical CO₂ (86%) with the remaining portion of the CO₂ dissolving in the formation brine over the simulated 100 years post injection. **Figure 3.** shows the cumulative storage for each of the mechanisms.

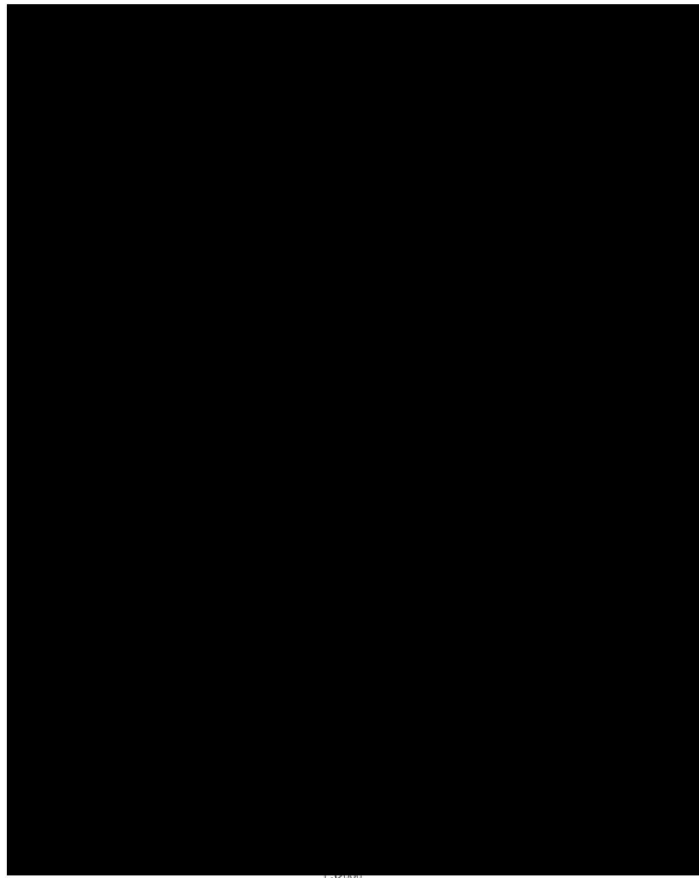


Figure 1. Plume development through time: 1-year, 5-year, 10-year, 15-year, 20-year, 23-year (end of injection), 32-year post injection, and 100-year post injection.



Figure 2. Cross-sections showing the plume development at varying times through the project.

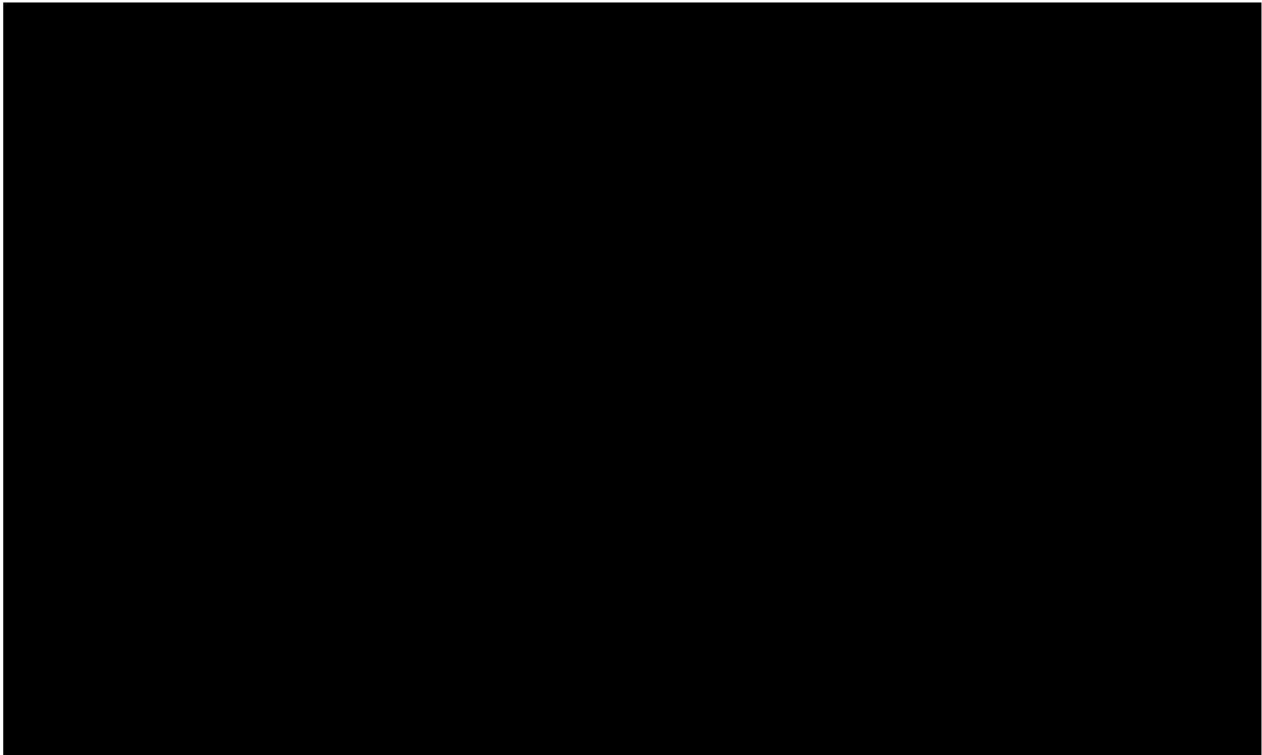


Figure 3. CO₂ storage mechanisms in the reservoir.

AoR Delineation

The AoR was determined by the largest extent of the CO₂ plume from computational modeling results plus a buffer zone. In the AoR scenario, CO₂ was injected into the depleted Winters Formation [REDACTED] until the reservoir pressure reached 90% of the discovery pressure of [REDACTED].

Figure 4. shows the AoR, injectors and offset monitoring wells. These monitoring wells were selected to both track the plume and / or measure reservoir pressure to understand the Pressure and CO₂ plume development:

1. By integrating the reservoir pressure increase with the injected volume, CTV will complete a material balance to verify the pore volume and AoR edges.
2. CO₂ plume and water contact will be calculated from monitoring well pressure, CO₂ saturation and column height.

If the reservoir pressure increase associated with the injected volume does not follow the predicted trend from computational modeling, CTV will reassess the AoR.

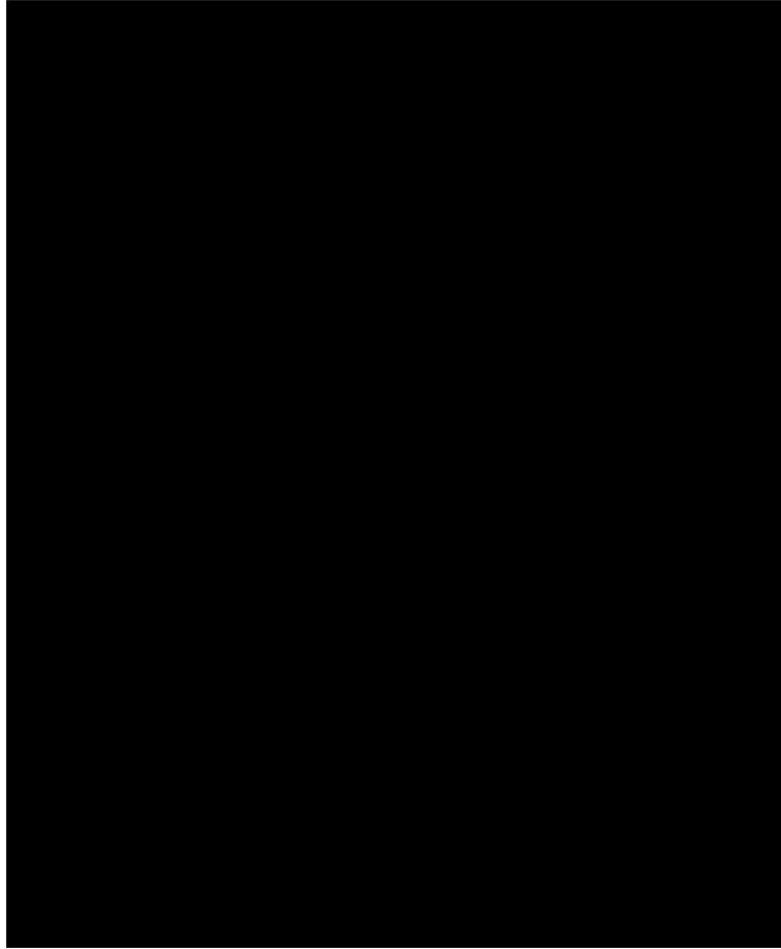


Figure 4. Map showing the location of injection wells and plume monitoring wells.